AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) A solvent vapour recovery system comprising:

a distillation module comprising a distillation chamber for said solvent and heating means for heating said chamber to vaporize the solvent;

a direct condensation module comprising a container which holds a static liquid heat absorbing mass through which said vapour is directly passed for condensing the vapour and collecting the solvent in the liquid phase, the static liquid heat absorbing mass and the vapour being substantially the same material;

conduit means for directing the vapour substantially without condensation from said distillation chamber into direct contact with said static heat absorbing mass within said container;

a vapour management module for condensing vapour remaining uncondensed by said direct condensation module; and

a vapour outlet located above the surface of said static heat absorbing mass in said container, said vapour outlet communicating with said vapour management module to allow for passage of vapour from the container to the vapour management module.

2. (Original) The apparatus of claim 1 wherein said conduit means slope downwardly towards said heat absorbing mass to allow any condensate formed within said conduit to drain into said heat absorbing mass.

3. (Canceled)

4. (Canceled)

5. (Canceled)

6. (Canceled)

7. (Canceled)

8. (Previously Presented) The apparatus of claim 3 wherein the conduit directs vapour beneath the surface of said mass.

9. (Previously Presented) The apparatus of claim 1 wherein the conduit directs vapour to the bottom of said container.

10. (Previously Presented) The apparatus of claim 1 wherein the distillation chamber is located within an oil bath which is heated by said heating means.

11. (Original) The apparatus of claim 10 wherein the heating means comprises one or more heating elements located within said oil bath.

12. (Previously Presented) The apparatus of claim 1 wherein the distillation chamber is heated by means of an infrared heater located within said chamber.

13. (Previously Presented) The apparatus of claim 1 further comprising means for connecting said heating means to a power supply and a control means for controlling the power provided by said power supply to said heating means, said control means comprising a computer, sensing means for sensing a parameter which is dependent upon the rate of vaporization of solvent within said distillation chamber and generating reference signals

which are provided as input signals to said computer and switching means for selectively providing power to said heating means from said power supply, said computer being programmed to apply control signals to said switching means to control the amount of power applied to said heating means in accordance with said input signals received from said sensing means.

14. (Original) The apparatus of claim 13, wherein said parameter is the temperature of said distillation chamber.

15. (Previously Presented) The apparatus of claim 13, wherein said computer is programmed with a set of parameters based on the input signals received from the sensing means which, if exceeded, will activate said switching means to perform an ordered shutdown of said heating means by selectively activating said switching means to disconnect said heating means from said power supply.

16. (Original) The apparatus of claim 14, wherein the temperature sensing means comprises one or more platinum thermistor temperature probes.

17. (Previously Presented) The apparatus of claim 13, wherein said heating means consists of at least one heating element.

18. (Previously Presented) The apparatus of claim 13, wherein said heating means consists of a direct heating means.

19. (Original) The apparatus of claim 18, wherein said direct heating means consists of an

infrared heating lamp.

20. (Previously Presented) The apparatus of claim 13, wherein said switching means comprises one or more relays.

21. (Original) The apparatus of claim 13, wherein said heating means consists of a plurality of heating elements and said switching means comprises a plurality of relays respectively connecting said heating elements to said power supply.

22. (Previously Presented) The apparatus of claim 13, wherein said computer is programmed with a control law so that when a mixture of solvents is to be distilled in said distillation chamber, said computer runs a distillation procedure wherein the heating means raises the solution to a temperature causing the solvent with the lowest boiling point to vaporize, the temperature is then maintained until the aforementioned solvent is substantially removed from the solution, at which time the temperature is allowed to rise until the solvent with the next lowest boiling point begins to vaporize and power is applied to said heating means to maintain a desired rate of vaporization of said solvent, and the process is then repeated until all solvents have been distilled off.

23. (Original) The apparatus of claim 13, wherein said computer controls said switching means to vary the input to the heating means to balance the rate of vaporization of a solvent with the rate of condensation of the same solvent in a separate, but connected, container.

24. (Original) The apparatus of claim 1, wherein said vapour management module comprises a heat absorbing mass and a conduit extending between an inlet to said vapour

management module and a vent, said conduit passing through said heat absorbing mass.

25. (Original) The apparatus of claim 24, wherein said vent is at a higher elevation than said vapour outlet of said direct condensation module.

26. (Previously Presented) The apparatus of claim 24, wherein the heat absorbing mass is a liquid.

27. (Previously Presented) The apparatus of claim 24, wherein, the heat absorbing mass is crystalline.

28. (Previously Presented) The apparatus of claim 24, wherein the heat absorbing mass is water mixed with a salt to form a crystallized state.

29. (Original) The apparatus of claim 1, wherein said vapour management module comprises a solid heat absorbing mass which is permeable to vapour and condensation through which said vapour passes from said direct condensation module to said vent.

30. (Original) The apparatus of claim 29, wherein the heat absorbing mass is steel ball bearings.

31. (Original) The apparatus of claim 29, wherein the heat absorbing mass is glass chips.

32. (Previously Presented) The apparatus of claim 29, wherein a support member for said heat absorbing mass is provided in said vapour outlet of said direct condensation module, said support member being permeable to vapour and condensation and impermeable to said

heat absorbing mass.

33. (Previously Presented) The apparatus of claim 1, wherein the container of said direct condensation module is provided with a drainage means for draining liquid therefrom.

34. (Original) The apparatus of claim 33, wherein the drainage means comprises a tap.

35. (Original) The apparatus of claim 33, wherein the drainage means comprises an overflow pipe in said container.

36. (Currently Amended) A vapour management system comprising a vapour inlet and a vapour outlet and means for passing vapour from said vapour inlet through a static heat absorbing mass to said vapour outlet, said heat absorbing mass being permeable to vapour and condensate passing through said mass ~~and either being non-adsorbent of said condensate or~~ the mass being comprised of the same liquid as said condensate.

37. (Previously Presented) A vapour management system according to claim 36 further comprising a static heat absorbing mass, and a conduit passing through said heat absorbing mass in heat exchange therewith and extending between said vapour inlet and said vapour outlet for guiding vapour from said vapour inlet through said conduit to said vapour outlet.

38. (Previously Presented) The apparatus of claim 36, wherein said mass comprises a mixture of water and salt.

39. (Previously Presented) The apparatus of claim 36, wherein the heat absorbing mass is steel ball bearings.

40. (Previously Presented) The apparatus of claim 36, wherein the heat absorbing mass is glass chips.

41. (Previously Presented) The apparatus of claim 36, wherein the heat absorbing mass is air.

42. (Previously Presented) The apparatus of claim 36, wherein the heat absorbing mass is a solid mass.

43. (Original) The apparatus of claim 36 wherein the heat absorbing mass comprises a combination of the vapour to be recovered in its liquid phase and a solid mass.

44. (Original) The apparatus of claim 43 wherein a support member for said solid mass is provided in said vapour inlet, said support member being permeable to vapour and condensate and impermeable to said solid mass.

45. (Original) Apparatus for connecting heating means for a distillation chamber in a solvent vapour recovery system to a power supply and a control means for controlling the power provided by said power supply to said heating means, said control means comprising a computer, sensing means for sensing a parameter which is dependent upon the rate of vaporization of solvent within said distillation chamber and generating reference signals which are provided as input signals to said computer and switching means for selectively providing power to said heating means from said power supply, said computer being programmed to apply control signals to said switching means to control the amount of power applied to said heating means in accordance with said input signals received from said

sensing means.

46. (Original) The apparatus of claim 45, wherein said parameter is the temperature of said distillation chamber.

47. (Previously Presented) The apparatus of claim 45, wherein said computer is programmed with a set of parameters based on the input signals received from the temperature sensing means which, if exceeded, will activate said switching means to perform an ordered shutdown of said heating means by selectively activating said switching means to disconnect said heating means from said power supply.

48. (Original) The apparatus of claim 46, wherein the sensing means comprises one or more platinum thermistor temperature probes.

49. (Previously Presented) The apparatus of claim 45, wherein said heating means consists of at least one heating element.

50. (Previously Presented) The apparatus of claim 45, wherein said heating means consists of a direct heating means.

51. (Original) The apparatus of claim 50, wherein said direct heating means consists of an infrared heating lamp.

52. (Previously Presented) The apparatus of claim 45, wherein said switching means comprises one or more relays.

53. (Original) The apparatus of claim 45, wherein said heating means consists of a plurality of heating elements and said switching means comprises a plurality of relays respectively connecting said heating elements to said power supply.

54. (Previously Presented) The apparatus of claim 45, wherein said computer is programmed with a control law so that when a mixture of solvents is to be distilled in said distillation chamber, said computer runs a distillation procedure wherein the heating means raises the solution to a temperature causing the solvent with the lowest boiling point to vaporize, the temperature is then maintained until the aforementioned solvent is substantially removed from the solution, at which time the temperature is allowed to rise until the solvent with the next lowest boiling point begins to vaporize and power is applied to said heating means to maintain a desired rate of vaporization of said solvent and the process is then repeated until all solvents have been distilled off.

55. (Original) The apparatus of claim 45, wherein said computer controls said switching means to vary the input to the heating means to balance the rate of vaporization of a solvent with the rate of condensation of the same solvent in a separate, but connected, container.